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The Effect of COVID-19 Vaccine Education with Audiovisual Media on Anxiety Levels of Pregnant Women as Candidates for COVID-19 Vaccination Participants

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ABSTRACT

Giving the Covid-19 vaccine to pregnant women causes anxiety for pregnant women. One of the interventions that can be given is education using audiovisual media. This study aims to analyze the effect of audiovisual Covid-19 vaccine education on the anxiety level of pregnant women as potential participants for the Covid-19 vaccination in the work area of the Paleran Health Center. This study used a quasi-experimental with a pretest-posttest control group. The sample of this study was 84 pregnant women and used purposive sampling. The data was obtained using an anxiety questionnaire (validity=0.38 and reliability=0.93). The Wilcoxon test showed that there was an effect of education using audiovisual media (p=0.000). While in the control group, there was no effect (p=0.988). Mann-Whitney showed a significant difference between the intervention group after being given audiovisual media education and the control group (p=0.002). Audiovisual media is attractive and easy to understand because it can stimulate sight and hearing someone curious about the video that aired and got the information that affects mentality and behavior, so decrease anxiety level. in this case, audiovisual media will reduce pregnant women's anxiety about the Covid-19 vaccine.

Keywords: education with audiovisual; anxiety level; CoronaVac; pregnancy woman

INTRODUCTION

Coronavirus Disease-19 or commonly referred to as Covid-19 is an infectious disease that was spread by the coronavirus in 2019 (Satuan Tugas Penanganan Covid-19, 2021). One of the efforts to break the chain of the spread of Covid-19 is by giving Covid-19 vaccinations, especially to pregnant women (Kemenkes RI, 2021b). On August 2, 2021, the Ministry of Health issued a Circular (SE) prioritizing the provision of Covid-19 vaccination for pregnant women in high-risk areas or red zones (Kemenkes RI, 2021a). Vaccines that can be given to pregnant women are Pfizer and Moderna mRNA vaccines and inactivated vaccines from Sinovac, subject to availability. The first dose of the Covid-19 vaccine is started in the second trimester of pregnancy and the second dose is given depending on the duration of the vaccine (POGI, 2021). Giving the Covid-19 vaccine to pregnant women has caused several responses, one of which is causing anxiety in pregnant women.

Anxiety is a feeling of excessive worry and an unclear object that causes emotional, cognitive, behavioral, and physical symptoms as well as a person's response to internal and external stimuli (Wardani et al., 2018). Anxiety in pregnant women is due to the shadow of scary things from the birth process that does not necessarily occur this condition causes pregnant women to experience drastic changes not only physically but also psychologically (Niko, 2018). Anxiety felt by pregnant women will affect the hypothalamus to stimulate the endocrine glands that regulate the pituitary gland, this response causes an increase in hormone production that affects almost every organ in the body, such as heart palpitations, rapid heartbeat and breathing, and excessive sweating (Niko, 2018). In addition, it will also cause vasoconstriction, such as disrupting blood circulation in the uterus and making the amount of oxygen received by the fetus less or more (Niko, 2018). Giving the Covid-19 vaccine to pregnant women also gives an anxious response to pregnant women, this is because there are no clinical trials of the Covid-19 vaccine against pregnant women that confirm the safety of the vaccine, so this is what makes people worry about whether there are unwanted side effects for pregnant women, mother and fetus (Solihah et al., 2020).

Meanwhile, the spokesperson for the Covid-19 vaccination of the Indonesian Ministry of Health, Siti Nadia Tarmizi, said that the scope of the Covid-19 vaccination was still a challenge because there were doubts felt by pregnant

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women (Rini, 2021). This is in line with the opinion of Troiano dan Nardi (2021), which explains that vaccine anxiety is still high for various reasons. Troiano dan Nardi (2021) highlights that as many as 8% to 15% of pregnant women have anxiety about the Covid-19 vaccine. Research by Carbone et al., (2021), revealed that as many as 102 (71.8%) pregnant women refused the Covid-19 vaccination. The study by Ayhan et al., (2021), also stated that as many as 189 (63%) pregnant women refused the Covid-19 vaccination.

Based on the results of a preliminary study conducted at the Health Service, it was stated that the coverage of Covid-19 vaccination for pregnant women in the working area of the Paleran Health Center was relatively low; this was because pregnant women who had received the Covid-19 vaccine did not reach a quarter of the planned target. The number of pregnant women in the working area of the Paleran Health Center is 495 people, and pregnant women with a gestational age of 13-33 weeks 351 people. Meanwhile, 44 pregnant women have received the Covid-19 vaccine as of December 4, 2021, and 451 people have not received the Covid-19 vaccine. 5 pregnant women with a history of preeclampsia and 4 pregnant women with a history of abortion.

Vaccine anxiety is caused by a lack of information about vaccine safety and the many hoaxes circulating in the community (Januszek et al., 2021). As many as 59.8% of pregnant women expressed anxiety about the dangers of vaccines on the health of their babies, as many as 15.7% of pregnant women were worried about the impact of the Covid-19 vaccine on their health. As many as 16.6% of pregnant women feared getting negative responses from other people. As many as 40.2% of pregnant women stated that the time of making and developing vaccines was too fast (Mappa et al., 2021). In addition, 44.7% of pregnant women also admitted that they were very worried about the unexpected impact that could occur in the future (Abdul & Mursheda, 2020). In his literature review, Troiano dan Nardi (2021) stated that low education levels were also a factor influencing anxiety about the Covid-19 vaccination. Anxiety arises due to insufficient knowledge or information (Stuart et al., 2016).

Currently, knowledge or information can be obtained through electronic media such as smartphones with various methods and educational media (Sari et al., 2020). Yusantika et al., (2018), in their research, classified learning media into 3, namely audio, visual, and audiovisual. Based on research results Sinaga (2019), stated that the level of knowledge of pregnant women about exclusive breastfeeding using audiovisual aids was higher (59.1%) compared to pop-up book graphic media (40.9%). Another study stated that the average value of knowledge in pregnant women about preventing the transmission of Human Immunodeficiency Virus (HIV) from mother to child (PPIA) through audiovisual was higher (94.72 points) compared to leaflet media (94.24 points) (Rochmawati et al., 2021). Anggraini et al., (2020), in their research also stated that the attitude of pregnant women toward stunting prevention using audiovisual media was higher (95.20%) compared to respondents who did not use audiovisual media (16.7%).

Information conveyed through audiovisual media can also generate motivation and psychological influence on the recipient of the information, as well as the sounds and images in the video can produce positive thoughts so this media is effective for diverting attention and anxiety (Risnawati, 2018). Another advantage of delivering material using audiovisual media is that participants look more enthusiastic and focused in watching videos (Pramadhan, 2021). Zulfa dan Kusuma (2020), in his journal, explained that delivering education with audiovisual media has several advantages, among others, the material is easy to digest, especially for people who need to be literate and are not accustomed to concentrating on text-based communication. Presentation of material using audiovisual media is very appropriate to do because the teaching materials to be delivered can be replaced by innovations from audiovisual media such as sound slide programs, video, or television programs (TV), and instructional video or television (TV) (Firmadani, 2020). In addition, providing education with audiovisual media can display backward movements and can use certain effects so that it can support the learning process (Sari et al., 2020).

Based on the background explained, this study aims to analyze the effect of audiovisual Covid-19 vaccine education on the anxiety level of pregnant women as potential participants for the Covid-19 vaccination in the work area of the Paleran Health Center. This research is important because anxiety about the covid-19 vaccine can affect the increase in blood pressure and the decision to get the covid-19 vaccine.

METHOD

The research design used is a quasi-experimental type with a research design that is pretest-posttest with control group. The population in this study was 298 pregnant women in the working area of the Paleran Public Health Center, Jember Regency. The number of samples in this study was 84 pregnant women who were calculated using G- Power with an effect size of 0.363. This research has passed the ethical feasibility test with the research ethics test number 016/UN/25.1.14/KPEK/2022 at the Faculty of Nursing, Universitas Jember. Data collection techniques in this study are as follows.

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1. The study in the control group was carried out simultaneously with the pregnant women class for 4 days according to the schedule of the respective regional midwives, and each class of pregnant women consisted of 10-15 respondents. The study in the intervention group was divided into two sessions (each session consisted of 21 respondents) and was conducted for 2 days.
2. Researchers introduce the research aims, objectives, and benefits to respondents.
3. The researcher asks for consent from the respondent by giving informed consent and asking for a signature of approval as a sign of willingness to be researched.
4. Researchers provide pretest questionnaire sheets to be filled out by respondents and provide guidance/explanations if needed.
5. The control group will be given a time lag of 15 minutes from the pretest; then, the researcher will give the post-test sheet to be filled out by the respondents. After that, questionnaires were collected for researchers, and the control group would be given education about the Covid-19 vaccine using audiovisual media for 30 minutes (2x video playback).
6. The intervention group was also given a 15-minute break from the pretest. The researcher would provide education about the Covid-19 vaccine using audiovisual media for 30 minutes (2x video playback), which the regional midwife also assisted in delivering this video. After that, the researcher gave the post-test sheet to be filled out by the respondents.
7. All completed questionnaires will be checked, and data will be processed through editing, coding, entry, and cleaning processes.

Researchers need to do a normality test first using the Kolmogorov-Smirnov test before doing the bivariate analysis test; this is because the respondents are >50 people, where the pretest-control data and the pretest-posttest of the intervention group were not normally distributed with values of 0.04, 0.04, and 0.005, respectively. Meanwhile, the post-test data for the control group was normally distributed with a value of 0.2. In a paired trial, to test the difference between the pretest-posttest of the control and intervention groups, the researcher needs to use the Wilcoxon statistical test, while in the unpaired group test, the Mann-Whitney test is used.

The instrument used in this study measuring the anxiety of pregnant women as potential participants for the Covid-19 vaccination compiled by Carbone et al. (2021) and Ayhan et al. (2021). This questionnaire consists of 16 question items, and each item has 5 scales, namely a scale of 0 (not anxious), a scale of 1 (rarely anxious), a scale of 2 (sometimes anxious), and a scale of 3 (often anxious). A scale of 4 (always anxious) is used to measure the anxiety of pregnant women about the Covid-19 vaccine; the assessment in the questionnaire is answered by choosing the answer according to the feelings being felt.

RESULT

Characteristics of Pregnant Women

Table 1. Distribution of Respondent Characteristic Frequency by Age, Education, Work, and Anxiety about Covid-19 Vaccine

Characteristics	Control Group		Intervention Group	
	Frequency	Percentage	Frequency	Percentage
Age				
Middle Adult	38	45.2	40	47.6
Late Adulthood	4	4.8	2	2.4
Education				
Elementary	3	7.1	0	0
Junior high school	14	33.3	11	26.2
Senior high school	16	38.1	26	61.9
Graduate	9	21.4	5	11.9
Work				
Doesn't work	30	71.4	30	71.4
Working	12	28.6	12	28.6
Anxiety about the Covid-19 Vaccine				
Mild Anxiety	24	57.1	28	66.7
Moderate Anxiety	18	42,9	14	33.3

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Based on the research table above, most pregnant women in control and intervention groups were in the middle adult category, severally 38 (45.2%) and 40 (47.6%). As many as 24 (57.1%) pregnant women in the control group and 28 (66.7%) pregnant women in the intervention group experienced mild anxiety about the COVID-19 vaccine during this study. The last education of pregnant women in the control and intervention groups was high school, with a percentage of 38.1% and 61.9%, respectively. Most pregnant women in the control and intervention groups were housewives (not working), and as many as 30 (71.4%) pregnant women.

Mann-Whitney Test Results

Table 2. The difference in Anxiety about the Covid-19 Vaccine after given Education with Audiovisual Media

Group	p-value (2-tailed)
Control and Intervention	0.002

The table above shows that the results of the Man Whitney test obtained on the anxiety level variable of pregnant women as potential participants for the Covid-19 vaccination in the Paleran Health Center working area obtained a p=0.002 which is p<0.05, which means there is a difference in anxiety between the control and intervention groups after being given treatment.

DISCUSSION

Characteristics of Pregnant Women in the Control Group and the Intervention Group

The results of this study showed that the age of the pregnant women in the control group and the intervention group was 29 years old. This is under research conducted by Yasin et al. (2019), which explains that pregnant women aged 28-30 years experience mild and moderate anxiety. According to the theory put forward by Stuart et al. (2016), One of the precipitation factors (internal factors) that cause anxiety in pregnant women at a young age, at which age the female reproductive system is still immature, and the psychological readiness of the mother in facing childbirth is still lacking. Anxiety about giving the Covid-19 vaccine is felt by pregnant women, both young and old. Pregnant women at a young age tend to feel higher anxiety due to immature emotional stability. While older, pregnant women tend to have lower anxiety levels because their emotional stability and way of thinking are more stable.

The gestational age in the control and intervention groups in this study was the second trimester (14-27 weeks). Meanwhile, the level of anxiety felt by pregnant women about the Covid-19 vaccine in the control group and the intervention group was in the mild anxiety category, respectively, with as many as 18 (42.9%) and 28 (66.7%) pregnant women. The theory put forward by Islami et al. (2021) explained that the higher the trimester of pregnancy, the higher the level of anxiety felt by pregnant women, such as the emergence of physiological changes during pregnancy and many factors in it, causing anxiety in pregnant women to fluctuate. Not all pregnant women can get the Covid-19 vaccine; only pregnant women with a minimum gestational age of over 13 weeks or in the 2nd trimester of pregnancy can be given the Covid-19 vaccination. The anxiety pregnant women feel about the Covid-19 vaccine is caused because pregnant women still do not fully believe in the effectiveness or level of efficacy after receiving the Covid-19 vaccination. Another thing that also causes pregnant women to feel anxious about the Covid-19 vaccine is the concern about side effects such as fever and pain, so this is the reason pregnant women refuse to be vaccinated against Covid- 19.

The highest level of education in the control and intervention groups during the study was high school, with as many as 16 (38.1%) and 26 (61.9%) pregnant women. Rinata dan Andayani (2018) explained that the higher a person's education, the level of knowledge and intellectual maturity will be of higher quality. This is also per the theory put forward by Mangrasih (2019), which explains that the higher a person's level of education, the more rational a person's response to problems will be. This is in line with research conducted by Yasin et al. (2019), which explains that the highest level of education among pregnant women is high school, as many as 17 (54.8%) pregnant women. The level of education will determine whether someone easily understands and absorbs information or knowledge. The higher the education level of pregnant women, it will affect the process and ability to think so that pregnant women will be faster and able to capture new information and tend to pay more attention to the health of themselves and their families. Therefore, pregnant women with a high level of education will find out in-depth about the Covid-19 vaccine and its benefits of the Covid-19 vaccine, so that their anxiety of pregnant women about the Covid-19 vaccine will be reduced or there will be no anxiety.

Most occupations in the control and intervention groups during the study were homemakers (not working), and as many as 30 (71.4%) pregnant women. Siregar et al. (2021) explained that pregnant women who do not have jobs would

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experience more anxiety than pregnant women who have jobs. This is in line with research conducted by Yasin et al. (2019), which explains that most jobs for pregnant women are housewives (not working), and as many as 30 (96.8%) are pregnant women. Pregnant women who do not work will experience anxiety about the Covid-19 vaccine due to the lack of information obtained about the importance of the Covid-19 vaccine. In contrast, pregnant women who work will understand more about the importance of the Covid-19 vaccine because, at work, they have been informed and are often exposed to the benefits of the Covid-19 vaccine. Even now, several workplaces have implemented policies for mandatory Covid-19 vaccines so that pregnant women who work and still feel anxious about the Covid-19 vaccine can shift their feelings of anxiety to activities that take up their time compared to pregnant women who do not work so that pregnant women those who work will be more focused on their work compared to thinking about the side effects caused by the Covid-19 vaccine

The Effect of Covid-19 Education Using Audiovisual Media on Anxiety Levels of Pregnant Women as Candidates for Covid-19 Vaccination Participants in the Work Area of the Paleran Health Center

The results of the Man Whitney test showed a significant difference between the control group and the intervention group after being given treatment with a p-value of 0.002. This shows that the provision of education through audiovisual media influences pregnant women's anxiety level as potential participants for the Covid-19 vaccination in the work area of the Paleran Health Center. The theory put forward by Arista (2020) explains that audiovisual media could make a person curious about the video that is shown and must absorb the information so that it can affect mentality and behavior that will reduce anxiety. The brain that initially feels anxious will stop worrying because of the new stimuli it receives. This is in line with research conducted by Sinaga (2019), which explains that the level of knowledge of pregnant women about exclusive breastfeeding using audiovisual media is higher (59.1%) compared to pop-up-book graphic media (40.9%). Another study stated that the attitude of pregnant women toward stunting prevention using audiovisual media was higher (95.20%) compared to respondents who did not use audiovisual media (16.7%) (Anggarini et al., 2020). Rochmawati et al. (2021), in their research also stated that the average value of knowledge of pregnant women about the prevention of HIV transmission from mother to child (PPIA) through audiovisual was higher (94.72 points) compared to leaflet media (94.24 points).

When a person is in a state of stress and tension, this is received directly as a signal from the central nervous system. Stimuli that reach the brain are processed by the cerebral cortex and sent to the hypothalamus to activate the Limbic Adrenal Pituitary Hypothalamus Axis (LHPA) through the production of Corticotropin-Releasing Hormone (CRH). This hormone sends messages to the anterior pituitary gland and releases Adenocortic Hormone Trophin (ACTH) (Wardhana, 2016). ACTH stimulates the adrenal cortex to secrete glucocorticoid hormones, particularly human cortisol, the product of the Hypothalamic Pituitary Adrenal Axis (HPA axis) and plays a role in immune responses to stressors, such as anti-inflammatory and immunosuppressive effects. Cortisol can also affect the balance of Th1/Th2. cells (Wardhana, 2016).

Audiovisual media is a tool or means used as an intermediary in educating; this media is used because it is easy to understand and can stimulate sight and hearing to build a sense of enthusiasm in a person to acquire new knowledge. One of the advantages of using audiovisual media is that teaching materials will have a more precise meaning so that respondents will find it easier to understand the material and master the objectives of the learning delivered by the presenters. Meanwhile, the weakness of using audiovisual media is that it uses more verbal language so that this media can only be understood by listeners who have a good level of word or language mastery. The average effective audiovisual media playback is 8-12 minutes for 2 playbacks. Audiovisual media is given to stimulate a person's sense of sight and hearing, this allows a person to concentrate more on the material presented so that the body will release serotonin and endorphins to relieve tension and anxiety. Therefore, these situations and conditions make pregnant women feel calm (relaxed) and comfortable (Irwan et al., 2021).

The education provided through audiovisual media contains material about what the Covid-19 vaccine is, how it works and what side effects are felt after getting the Covid-19 vaccine. The purpose and benefit of this education are to increase the insight and knowledge of pregnant women as potential participants for the Covid-19 vaccination so that pregnant women do not need to hesitate or worry about the Covid-19 vaccine. The use of audiovisual educational media was chosen because the material presented can be presented in an attractive form in the form of images and sound so that it can be more easily understood by pregnant women. This media is very interesting to use because this media can stimulate sight and hearing so it can have an impact on changing a person's behavior. Providing education through audiovisual media is considered more effective for use in providing education because the material displayed is not boring. The advantages of audiovisual media include more concrete objects, motivation to change, eliminating boredom during learning activities, and stronger memory of the object being studied.

The current Covid-19 pandemic has caused changes in people's lifestyles, and this situation has forced the government to implement various policies to deal with the spread of Covid-19. One of the programs initiated is the

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provision of the Covid-19 vaccine, especially to pregnant women. However, this program is still experiencing obstacles, this is due to much wrong information, less intense, and the government and health workers are not precise in providing positive information or education about the Covid-19 vaccine, so this program raises diverse perceptions and triggers anxiety in the surrounding community, especially pregnant women about the Covid-19 vaccine.

There are many issues that say pregnant women can die after getting the Covid-19 vaccine or their fetuses die in the womb, even babies are born with disabilities, and so on, making pregnant women doubt and afraid to be vaccinated against Covid-19. Though according to POGI (2021), said that the death of pregnant women due to Covid-19 was far more and more terrible compared to pregnant women who died, or their babies died after getting the Covid-19 vaccine, which even until now, no data is showing that this happens. The Covid-19 vaccination for pregnant women has received permission from the government even though there are no clinical trials regarding the vaccine's safety for pregnant women. This causes pregnant women to worry about adverse side effects for the mother and fetus. Apart from this, the actual benefits of the vaccine are far more than the risks; one of the benefits that can be felt by pregnant women who have received the Covid-19 vaccine is that it can reduce morbidity and the risk of worsening if the pregnant woman is infected with the Covid-19 virus. In addition, the Covid-19 vaccination for pregnant women showed a significant reduction in pregnancy complications, the risk of maternal death, abnormal births such as premature birth, and early protection for newborns. The types of Covid-19 vaccines that can be given to pregnant women include Sinovac, Astra Zeneca, Moderna, and Pfizer vaccines, of which the Covid-19 vaccine is highly recommended to be given to pregnant women with gestational age above 12 weeks and no later than 33 weeks of gestation. Therefore, by providing health education about the Covid-19 vaccine using audiovisual media, it is hoped that pregnant women will feel interested in the content of the videos displayed so that they can increase their interest and motivation in gaining knowledge about the importance of the Covid-19 vaccine for pregnant women and become sure to get the Covid-19 vaccination to improve health.

CONCLUSION

Education with audiovisual media can increase learning motivation because it involves imagination to encourage pregnant women to be more familiar with the Covid-19 vaccine. it is because pregnant women are directly to understand more about the material to be delivered. After all, the material is more interesting, and it is easier to remember the material presented through the display on the projector screen. The research was conducted by distributing pretest-posttest questionnaires stapled into one. In this way, in the end, many pregnant women answered the same questions as the pretest questionnaires. In addition, in the intervention group to provide education, researchers were assisted by regional midwives in delivering the material so that the material presented was clearer and not purely from audiovisual media; this may also affect the information received by respondents. The results of this study are expected to be used as a means or tool for health workers to educate the public, especially pregnant women, by using audiovisual media through social media so that it is more interesting to learn or understand the importance of the Covid-19 vaccine.

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